The Basle environment at the time when the anatomies of Andreas Vesalius and Felix Platter were printed in Basle 1530 – 1600*

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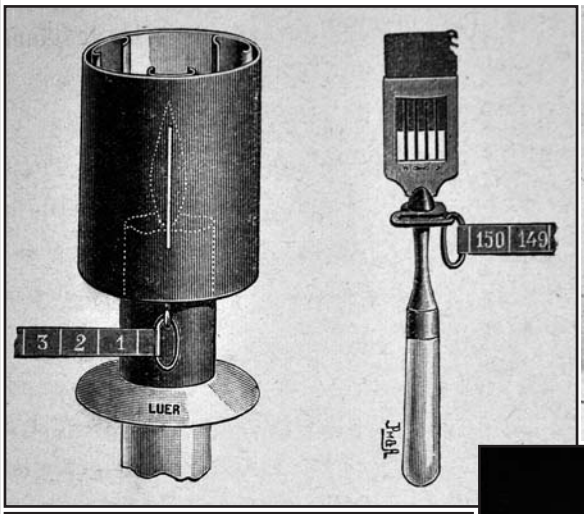

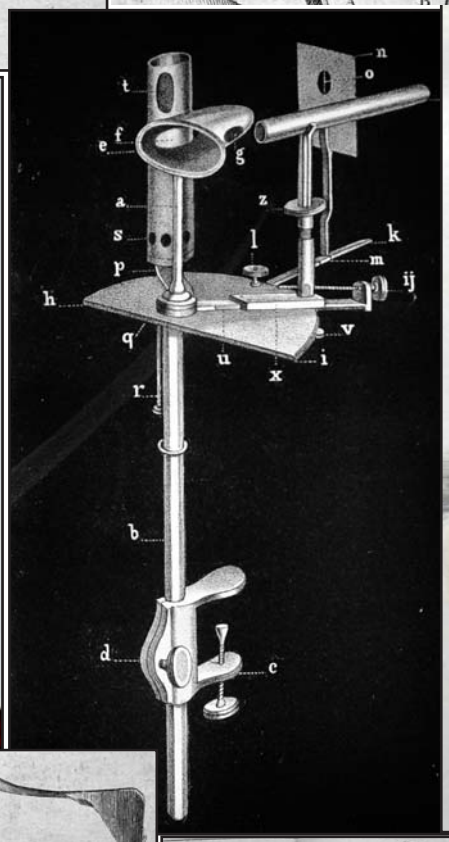

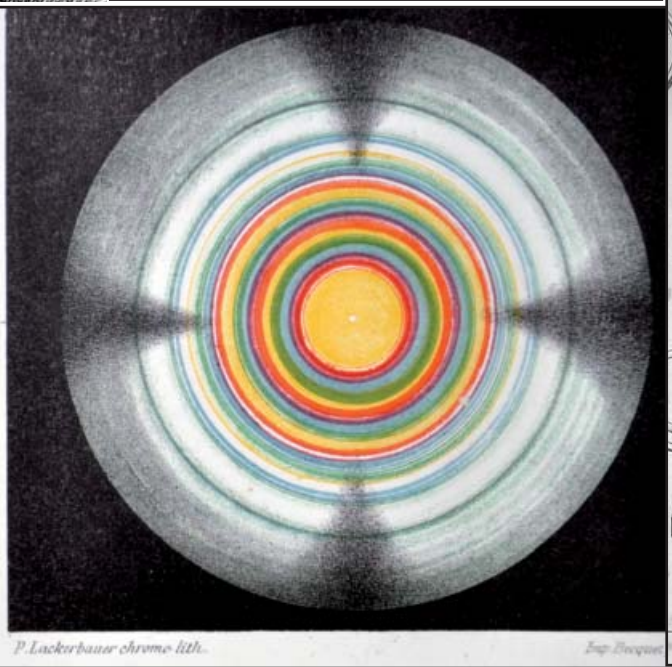

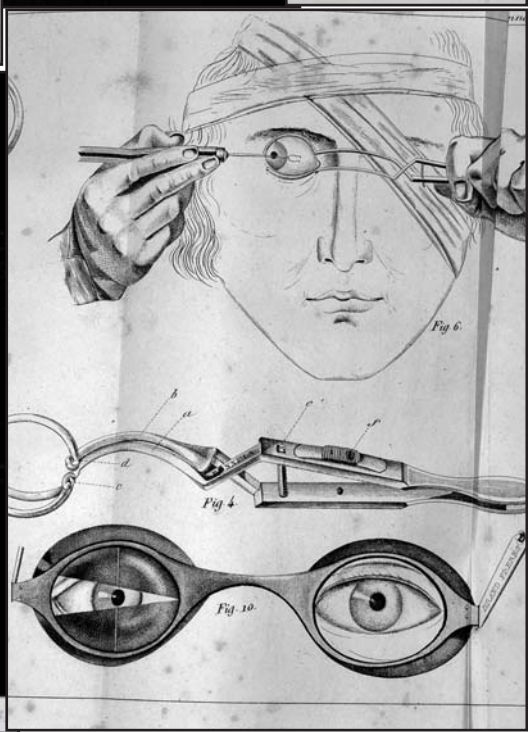

Front page of the 1543 edition of the Fabrica of Andreas Vesalius in the hand colored copy at Universitätsbibliothek Basel

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The Basle environment at the time when the anatomies of Andreas Vesalius and Felix Platter were printed in Basle 1530 – 1600*

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Fig. 1 *Depiction of the horizontal section of the eye on p. 699 of the 1543 edition of Vesals Fabrica (colored copy, Universitätsbibliothek Basel, AN I 15). The lens is in the center of the eye.*

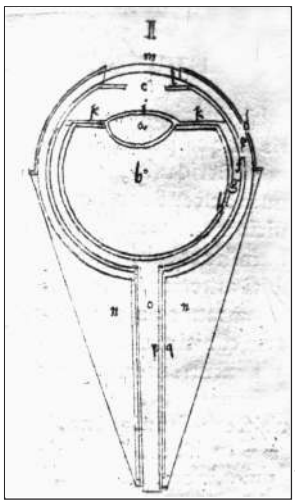

Fig.2: *Depiction of the eye in Felix Platter's "Structura". Figure I in Plate 4.9. Lens in the correct position. The commentary includes the following text: "The retina is the seeing tissue."*

Introduction

The importance of the pictorial representations of the eye by Andreas Vesalius (1514-1564) in 1543 and 1555 in "*De humani corporis fabrica*"[1] (Fig. 1), and by Felix Platter (1536-1614) in 1583 in the second volume of his book on "*De corporis humani structura*"[2] (Fig. 2) has already been covered sufficiently[3,4]. Vesalius' work was revolutionary for the development of scientific medicine. Twenty years after the publication of Platter's depiction, Johannes Keppler (1571-1630) used it as a basis for his image of the eye[5]. Both anatomical works were published in Basle.

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[1] VESALIUS (1543), Pl 73 Known in English as "The Fabrica" or "On the Fabric of the Human Body"

[2] PLATTER FELIX (21603,) Text Vol. II p. 187, Fig. Eye Fig. I from Plate 4.9

[3] KOELBING (1967), p. 71-74

[4] WOLLENSAK (1916), p. 36-38)

[5] KEPLER (1604, translation 2008), pp.73-296.

*) This essay was presented in German at the XXIX convention of the Julius Hirschberg Gesellschaft in Heidelberg on 10 October, 2015 and will appear under the title **Das Basler Umfeld zur Zeit des Druckes der Anatomien von Andreas Vesal und von Felix Platter in Basel 1530 – 1600** in the *Mitteilungen der Julius-Hirschberg-Gesellschaft zur Geschichte der Augenheilkunde* Vol. 17 (2015) (in print). I am thankful to Geraldine Diserens (Klingenweg 5, D-64397 Modautal-Brandau, Germany) for her professional English translation.

However, the immense importance and lasting impact of these works would seem to justify taking a look at the environment in which they were published. Specifically, this involves examining what was taking place in printing and publishing, at universities, in medical faculties and in broader civil society from the pre-Reformation right up to the turn of the century around 1600.

In this context, it is more important than the eye itself that Vesalius turned up at Oporin's printing house in Basle to supervise the printing of his "Fabrica". Thus the focus of interest shifts to Basle's book printing and publishing industry, which grew in importance during this time to rival those of Paris and Venice. In this context, Thomas Platter, who among other things printed and published the first edition of Calvin's "Christianae religionis institutio" in 1536 together with Oporin, is far more important than his son Felix. When Vesalius came to Basle and enrolled at the university there, the Faculty of Medicine was just in the early throes of awakening from a long torpor. Vesalius then gave a decisive boost to the teaching of anatomy by holding a public necropsy, until subsequently this faculty really flourished under Johannes Huber, Felix Platter, Thomas Zwinger and Caspar Bauhin[6], and all of this against a backdrop of many individual and extremely human stories.

After Johannes Gutenberg invented book printing in 1450, printing was likely already being carried out in 1457 in Bamberg, in 1459/60 in Strasbourg, in 1464/65 in Cologne, in 1465 in Subiacco, a monastery near Rom, in 1467 in Rome itself, in Eltville near Mainz, in 1468 in Augsburg and at the same time in Venice, Nuremberg, Paris and in Switzerland at Beromünster Monastery. In Basle, book printing began in 1468 or 1470[7], *thus about 20 years after Johannes Gutenberg's pioneering work in Mainz. At the time, Basle had a population of about 10,000*[8].

Up to 1500, Paris and Venice were the leading cities for book printing. In Venice, Aldus Manutius (1449 to about 1515) had access to manuscripts by Petrarch (gifted in 1362) and by Cardinal Bessarion (gifted in 1468). These comprised 482 Greek and 264 Latin *manuscripts from the plunder of* Constantinople in 1204[9].

Around the year 1500, Basle joined their ranks as an important city for printing and publishing that was their equal in terms of quality, but up to 1545 with a total of 3,514 print runs was never able to reach Venice's total of 11,332 titles, nor even those of Strasbourg with 4,903 and Cologne with 4,736[10]. With the printing of Sebastian Brant's (1458-1521) "Das Narrenschiff" in 1494 by Bergmann von Olpe (born between 1455 and 1460, died on 20 February, 1532), came the book that was to be the most widely read in the German language until the time of the Reformation.

Amerbach, Froben and Petri and their descendants

Basle only really became important with printers and publishers Johannes Amerbach (1440-1513), Johann Froben (1460-1527) and Johann Petri (1441-1511).

Johannes **Amerbach** studied in Paris under Heynlin (1439-1496) and became a Doctor of Philosophy, preacher, publisher and printer, from 1475 in Basle. He had learned the craft of printing from Heynlin too, and later in Venice as well. In Basle he associated with Johann Petri (1441-1511) and Johann Froben. In three years of extremely hard work up to 1506, Johannes Amerbach printed the complete edition of the works of *St. Augustine*. To do this, he needed to procure 20 tons of paper. He also printed works by *St. Ambrose* and *Petrarch*. In collaboration with Froben, he published 3 volumes of Sebastian Brant's

[6] BURCKHARDT (1917), p. 322.

[7] VAN DER HAEGEN (2001), p.20

[8] D'AUJOURD'HUI, MEYER in Historisches Lexikon der Schweiz [Historical Dictionary of Switzerland], GND: 4004617-5 | Link: http://www.hls-dhs-dss.ch/textes/d/D7478.php – available only in French, German and Italian, not available in English

[9] https://en.wikipedia.org/wiki/Biblioteca_Marciana

[10] LEU (2016), p.55

"Corpus juris canonici" and the writings of Saint Jerome. It was left to **Johann Froben** (1460-1527), to complete this work.

Froben played a significant role because he printed a large portion of the works of Erasmus of Rotterdam (1469 – 1536). Erasmus appears to have become well acquainted with Froben in Basle through a rather random contact. At that juncture, Froben had already experienced his fair share of the ups and downs of book printing. He had reprinted one of Erasmus' works (without permission! – which was common practice at the time, however), but in a form which had apparently pleased Erasmus greatly[11]. Thereafter, a lifelong friendship developed between Erasmus and Froben. A letter which Erasmus wrote to a Dutch friend bears eloquent testimony to this. It reads:

> *"The untimely death of my friend Froben cast me into such deep despondency that no diversion was able to console me … My grief was immeasurable, because the bond which fondness and mutual affection have forged binds more strongly than nature…"* [12]

The translation by **Erasmus** of the New Testament from Latin into Greek, which Froben published in 1516 and 1519, became the real precursor and engine of the Reformation. It also formed the basis for Luther's (1483-1546) translation into German. As a side note: **Erasmus** is one of the few people who, after long periods of great poverty, became rich through his books during his own lifetime! However, the violence of the Reformation was an abomination to Erasmus and it was for this reason that he moved to Freiburg im Breisgau in 1529 once the Reformation became well established in Basle[13]. On the death of Johann Froben, the collaboration and friendship continued with his son, Hieronymus Froben. Erasmus never managed to feel at home in Freiburg. When he returned to Basle a sick man at the end of May 1535, **Hieronymus Froben** took him in. In the night of 11 to 12 July 1536, Erasmus died. On 12 July, he was buried as a Catholic in Basle Minster. The Protestant **Myconius**, whom we will meet later, and who was now Antistes of the Reformed Cathedral in Basle, held the funeral oration.[14]

At that time, **Johann Petri** (1441-1511) made up the trio along with Amerbach and Froben. He reprinted with happy insouciance! He then printed the works of Saint Ambrose alone and had his own printing house from 1488. This became the parent company of Schwabe, Europe's oldest publishing house, which has now existed for more than 500[15]. Johann Petri's nephew,

Adam Petri (1454-1525) continued to run the business. It flourished with the publication of Luther's treatises. In the end, the 80 Luther manuscripts and Melanchthon's (1497-1560) writings formed a considerable portion of Adam Petri's oeuvre, which comprised a total of about 300 printed works[16]. The printing of a treatise by Franciscan monk Sebastian Hofmeister earned Adam Petri a lawsuit for defamation of the State of Lucerne in 1524. He had to go to prison, but was then allowed to attend the Frankfurt Book Fair after all. After this affair, censorship of printers followed in 1524 under Mayor Meltinger[17].

In 1527, Adam's son **Heinrich** took over the business. The publication of *Sebastian Münster's "Geographia universalis des Ptolemaios"* (Ptolemy's **Geography***)* in 1540 and of "*Gedichte Petrarcas"* (Petrarch's **Poems**) in 1554 are highlights in the history of the publishing house. In 1565, the Henric Petri publishing house became the "Officina Henricpetrina" (see below).

[11] HUIZINGA (1958), p.74

[12] TEUTEBERG (1986), p. 177

[13] TEUTEBERG (1986), p. 191

[14] TEUTEBERG (1986), p. 192 The Antistes was elected by the Grand Council (effectively parliament) of Basle or Zurich, and this office also came with a pastorate at a main church, in the case of Basle, at Basle Minster.

[15] LANFRANCHI (2013), p. 12

[16] LANFRANCHI (2013), p. 59

[17] LANFRANCHI (2013), pp.61-62

Thomas Platter

In 1527, an extraordinary man appears on the Basle scene, **Thomas Platter** (1499 - 1582). Like Conrad Gessner, who was born in 1516 and was thus 17 years his junior, Platter rose up from humble origins to become one of the most prominent personalities of the Reformation era in the region we now know as Switzerland. Thomas Platter's professional career was even more extraordinary than that of Gessner. This Thomas Platter deserves to be brought to the forefront of our attention to do justice to our description of the environment in which Felix Platter's depictions of the anatomy of the eye emerged, as Thomas was Felix Platter's father[18]. Through the extraordinary life of this remarkable man, we gain an introduction to one of the first comprehensive autobiographies in German literature. This was not published as an unabridged version until 1724[19]. It is available as an annotated edition[20] in the original language, and anyone who has not read it can be considered to have a gap in their education. Thanks to translation aids in the footnotes, the text is easy to read after a little familiarisation. In his book "*Le siècle des Platter 1499-1628*" [The Era of the Platters 1499-1628], which was published in 1995, historian Le Roy Ladurie turned this autobiography into a narration, without differentiating between historical material and embellishing interpretation. Thus for example, from the point when Oporin meets Platter, Ladurie calls him Platter's friend. This may have been the case, but Platter had never expressly called him this[21]. Nonetheless, the two definitely had a close relationship with one another.

Thomas Platter, who was probably born in 1499 in Grächen in the Canton of Valais, lost his father shortly after his birth, and his mother, who remarried shortly afterwards, hardly looked after him at all. As a half-orphan, he herded cows and goats for his aunts, and when he was about 10 years old, he was to receive lessons from a priest, but apparently received more beatings than instruction. Following on from this period, he spent 10 years roaming through Germany with a band of youths, which involved singing, begging and stealing for the older members of the roving gang.

After attending the Latin school of J. Sepidus in Schlettstadt, he went to Zurich in 1523. In Zurich, he received his humanist education and was moulded intellectually and religiously. Gripped by incredible studiousness, he shook off his previous indolence and learned Latin, like Gessner, under the redoubtable Humanist Myconius[22], living in the latter's house as well, taught himself Greek, and learned Hebrew under Theodor Bibliander (Buchmann (1509-1564)), the eventual successor to Zwingli's Chair of Theology. Subsequently, he himself gave private lessons in Hebrew and Greek, and gave Gessner instruction in Latin. It was one of Zwingli's sermons which led him to the new faith. From 1522-1525, the Reformation advanced throughout Zurich. Following Zwingli's ideals, he additionally desired to learn a craft, so he completed a rudimentary apprenticeship as a rope-maker. In 1527, he moved to Basle, where he came into contact, among others, with Erasmus of Rotterdam, and, for the first time, with the slightly younger **Johannes Oporin**, who helped him from the start in Basle.

Oporin, who had just become a Latin teacher at the secondary school "auf Burg", also known as the *Pädagogium*, *Münsterschule*, or *Schule auf Burg*), employed Platter as a junior teacher and helped him so that he

[18] KELLER (2016), pp. 14ff, 26

[19] JACOB-FRIESEN in PLATTER TH.(1999), p.186

[20] PLATTER Th, (1999)

[21] LE ROY LADURIE (1998), pp. 75-77

[22] Myconius (Oswald Geisshüsler, 1488-1552 who died of the plague!): Studied in Basle, became known as a redoubtable teacher in Basle; taught at the Grossmünster school in Zurich from 1516, in Lucerne from 1519, in Einsiedeln from 1522, taught at the Fraumünster school in Zurich from around 1523/24, at the end of 1531 became pastor of St. Alban's, Basle. On 13 August, 1532 he became Oekolampad's successor as Antistes, and thus pastor of the Minster.

could give private lessons in Hebrew in Basle, as he had done in Zurich, and thus was able to earn his meagre living. Subsequently, Platter returned to Zurich and accompanied Zwingli in 1529 in the First War of Kappel, in which the Protestant and Catholic cantons of the Old Swiss Confederacy fought an armed conflict. On the advice of his teacher and also mentor Myconius, in whose house he again lived in Zurich, he married Myconius' maid, **Anna Dietschi** (1495-1572). **Zwingli**'s death in 1531 in the Second War of Kappel was a heavy blow to Platter. That year, he again moved to Basle, this time for good, and became a Greek teacher from 1532/34 to 1540 at the Pädagogium there and from about 1532 to 1535 proof-reader at the printing and publishing house of **Johannes Herwagen** (1497-1557/59). He became a citizen of Basle in 1535.[23]

While he was working at Herwagen, he developed an interest in the printing business. "*Da ich aber sah, wie Hervagius und andere Trukerherren eine gute Sach hatten, mit wenig Arbeit gross gut gewunnent, dacht ich, möchte ich auch ein trukerherr werden"* and *"Ruprecht Winter, des Oporini Schwager, der hatte ein Frowen, die wolt auch gären ein Trukerherren frow gsin" ["But because I saw how Herwagen and other printers had a good thing, and gained great wealth with little work, I thought I would also like to become a printer."]* and *["Ruprecht Winter, Oporin's brother-in-law, he has a wife, she would also like to be a printer's wife."]* [24].

Thus **Platter** established a printing company together with **Balthasar Ruch** (**Lasius**), **Johannes Oporin** and **Robert Winter** in 1535. Only one year later, these printers produced their most important publication, the first edition of Calvin's (1509-1564) "*Christianae religionis institution" [Institutes of the Christian Religion]*, a seminal work which, like Luther's translation of the Bible, was to change the world. Other publications included writings about Cicero, correspondence between Zwingli and Oekolampad, the Greek *Onomasticon* (lexicon or thesaurus) by Julius Pollux, Aristote's Poetics, Works by Galen, Plutarch, Polybios and many more. Then a huge fight in the printing house, during which **Platter** and **Balthasar Ruch** (**Lasius**) almost beat each other to death, led to the bankruptcy of the entire company. **Platter** left the company in 1537/38, heavily in debt. In the meantime, his son **Felix** had been born in 1536.

Up to 1543/44, **Platter** printed several works on his own, including Aristotle's "*De Anima*" [On the Soul], the New Testament in Greek, a Luther manuscript by **Myconius**, two small manuscripts by **Galen** and **Hippocrates**, and two more print runs of the New Testament, as well as printing jobs for other printers like **Wattenschnee**, **Frobenius**, **Episcopus** (see below) and others – this being the most profitable work, as it was risk-free. He earned well. Thus he decided to purchase the three houses on Freie Strasse, in which he had previously been living as a

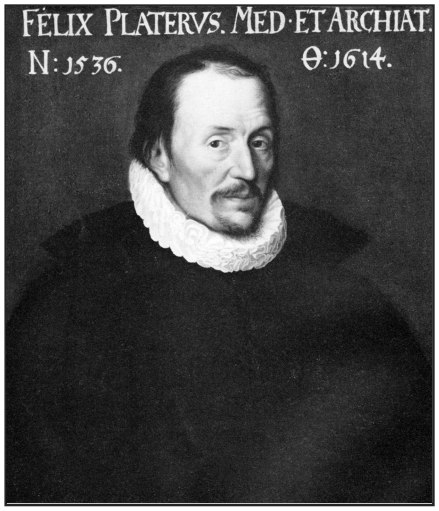


Fig.5*: Felix Platter, also painted by Hans Bock the Elder. The number 1614 in the top right-hand corner states the year of his death. The similarity between father (Fig. 4) and son is striking. (Natural History Museum Basel, in the former auditorium of the university/ (Photo Hinz).*

[23] DILL (1999), p.15

[24] PLATTER TH (1999), p.118

tenant and had more than twenty boarders, around 1543/44, although this put him greatly into debt (Fig. 3).

He had already been appointed as rector of the secondary school auf Burg in 1541, but did not assume this position until 1544. Once installed, he immediately began to modernise the school. He dared to read Homer, Vergil's Aeneid, Ovid's Metamorphoses and Cicero's speeches with the students, instead of leaving the "paedagogium" to the Arts Faculty. This initially earned him complaints. However, because he would not brook any interference into his choice of material, legal actions and disputes followed up to about 1548, which he managed to survive, however. The leverage his opponents used time and again in an effort to get rid of him as rector of the school was the argument that he held no Magister artium (Master of Arts) degree, and that moreover he had just strayed in from Valais[25]. He got himself into serious debt yet again when he acquired an estate near the city, the *Mittlere untere Gundeldingen,* for 660 gulden in 1549, using loans and sureties[26]. On this estate, he was able to pursue his ancestral penchant for farming, in which he involved his family as well. Later, after his death, evidently free of debt, his son Felix, on whom the desire to be a farmer had worn off, sold the estate

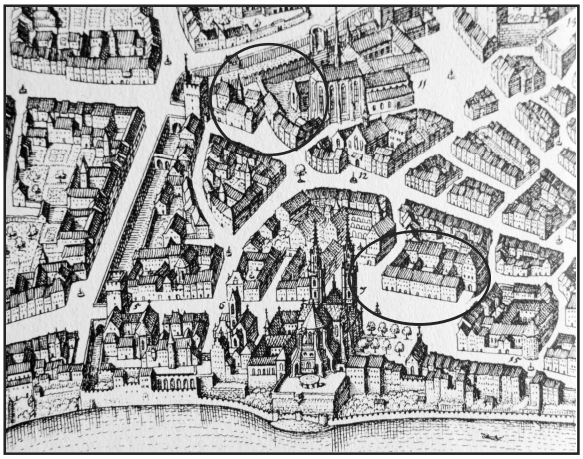


Fig. 3: *Upper circle: Thomas Platter's three houses on Freie Strasse. Lower circle: Secondary school "auf Burg". Excerpt from the 1642 Merian city map.*

In 1572, **Thomas Platter**'s wife **Anna Dietschi** died. Of her four children, only **Felix Platter** (Fig. 5 and Fig.12) survived. Two months after the death of his wife, Platter – now 73 – married the young **Esther Gross**, who bore him six children. It was only in 1578, and thus around 30 years after the long disputes with the Arts Faculty, that Platter gave up his position as headmaster. In 1582, he died on 26 January. Platter's portrait by **Hans Bock** the Elder depicts him a year before his death. He had outlived Oporin, who was born after him in 1507, and who had paved the way for him both into the teaching profession as well as into the printing business in Basle, by 25 years.

Johannes Oporin

At around the same time that **Platter** decided on the teaching profession as a means to secure his livelihood, Oporin was forced to give up this profession, because he did not want to relinquish his printing. *Two years after he had gone into business on his own, he published one of the most important books in medical science, Vesalius' Fabrica.* He then became one of the most important publishers, producing 1,000 publications, and with his education and his sporadic connection to the world of Paracelsus, and then to Vesalius, became in a much broader sense a central figure and point of concentration for seemingly totally opposing currents of his time[27]. This has been documented in his correspondence, which has been preserved in the university library, one of the largest collections that have been preserved from a 16th century book printer. It forms the basis for Martin Steinmann's outstanding portrayal of the life story of this extraordinary printer and publisher, on which this depiction of Oporin and his environment also draws.

[25] PLATTER TH, 1999, p. 131-137 and comments p. 177,178

[26] LOETSCHER (1971), p. 67 ff

[27] STEINMANN (1967) p. III

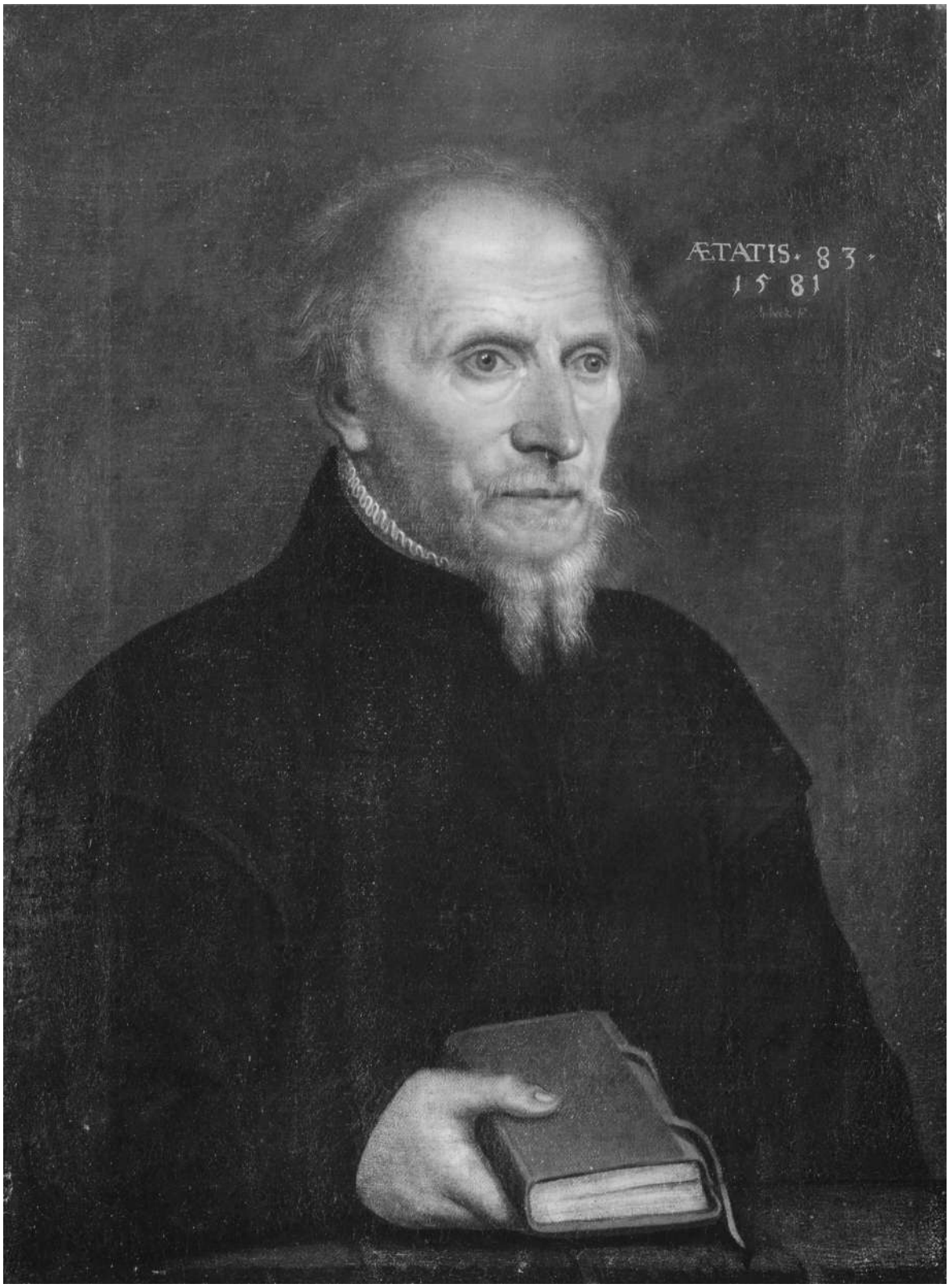


Fig 4: *Painting of Thomas Platter, probably 82 years old, a year before his death. 1581, Hans Bock the Elder. (Kunstmuseum Basel, Inv. No. 834, photo credit: Martin P. Bühler. Sincere thanks goes to the Kunstmuseum for permitting the reproduction of the painting in this work.)*

Johannes Oporin (originally **Herbst** (1507 – 1568)), had attended school in Strasbourg and Basle and was a teacher at Saint Urban's Abbey in the canton of Lucerne. When he returned to Basle, he first worked for **Johann Froben** as a proof-

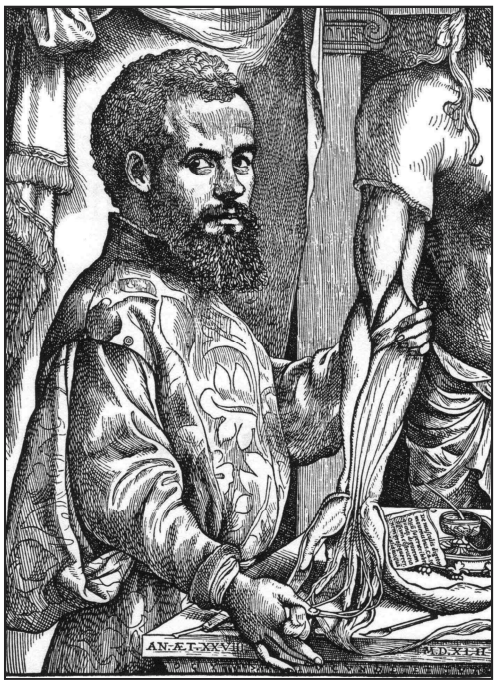


Fig. 6: *Portrait of Vesalius in the "Fabrica", painted by Stephan van Calcar or by Vesalius himself (self-portrait) (see text).*

reader, and from 1526 taught Latin at the Latin School in Basle. From 1527 to around 1529 he had become secretary (amanuensis) and assistant (famulus) to **Paracelsus**, who had turned up in Basle in 1527. He apparently went through a lot working for him.[28]. It was an entirely different world to that which he later encountered when working for **Vesalius**. In 1534, his first wife **Margaretha Feer**, with whom he had lived in a constant marital dispute since 1627, died[29]. Around 1535, as depicted above, he printed together with **Thomas Platter**, **Winter** and **Ruch**. In 1536, he got married again, this time to **Maria Nochpur**, known as **Ficina**, who brought five children from her first marriage into the union. From 1537 he taught Greek at the university. Alongside this, he studied medicine. On 28 September 1540, he was appointed "*Supperattendent*", meaning superintendent or overseer, of the secondary school " *auf Burg* " and the schools at St. Peter, which bound him to visiting each school on a daily basis and conducting an examination once a week. However, nothing became of this.

In December 1541, **Oporin** received the task of alternately reading one Greek author and grammar four days a week, and poetry and rhetoric on the other two days, for which he received an annual salary of 80 gulden. The contract was agreed for two years and was set to be renewed if **Oporin** were to relinquish his activities at the printing house. When he did not do this, he had to give up his work at the secondary school "auf Burg" in the year 1542[30].

From 1543, **Oporin** devoted himself entirely to printing. After having actually become a polymath, like many of the printers and publishers in Basle, he enjoyed great prestige because of this in Basle. He had a very deep connection to the content of the books he published, sometimes with every fibre of his being.

He experienced this when he printed the handwritten Latin translation of the Koran (1542/43), edited by **Theodor Bibliander** (1509-1564) – the first printed edition of the Koran anywhere in the world – and wanted to publish this without authorisation from the authorities. It was **Luther** who had discovered this manuscript and had passed it on to **Bibliander** for publication. The print run was confiscated and **Oporin** was imprisoned. Basle City Council evidently feared attracting attention from the Turks! Following pressure from **Luther** and **Melanchthon**, with the justification that this was the only way it could be demonstrated to scholars just how Satanic a work these texts of **Mohammed** really were[31], Basle City Council approved the distribution

[28] Quoted from PÄCHTER (1955), p.185, who quotedSUDHOFF (1936), p. 46ff quoted

[29] STEINMANN (1967), p. 10

[30] STEINMANN (1967), pp. 18-19

[31] FLACHMANN (1996) p. 55

Fig. 7: *Portrait of Johannes Oporin (lived around 1480-1587) by Hans Bock the Elder (Kunstmuseum Basel, Inv. No. 84, photo credit: Martin P. Bühler. Sincere thanks goes to the Kunstmuseum for permitting the reproduction of the painting in this work).*

of the work after protracted negotiations, but only on condition that neither Basle nor **Oporin** would be mentioned in the edition and that the book would be despatched from Wittenberg[32,33].

However, the task that was fully occupying **Oporin** at this time was the printing and publication of **Vesalius**' "*Humani Corporis Fabrica*" and the companion work, the "*Epitome*" 1542/43 (1555, the second edition).

Johannes Oporin and Vesalius

How did the collaboration with Vesalius, one of the personal physicians of Emperor **Charles V**, come about?

Andreas Vesalius, born 31 December, 1514 or 1 January, 1515 in Brussels, was 27 years old when he met with **Oporin** in late 1542 or early 1543 after having previously conducted correspondence with him[34].

Vesalius came from a family of physicians and apothecaries with connections to aristocracy. His father, a court pharmacist, smoothed **Vesalius**' way into the court of Emperor **Charles V** (1500-1558).

After attending schools in Brussels and Strasbourg between 1530 and 1533, he studied in Paris in the heartland of Galenism (a.k.a. humoralism). New discoveries from Italy were already having an impact there. In Paris, **Vesalius** published together with his teacher, **Johann Günther Andernach** (1505-1574).

He conducted autopsies for **Andernach**, as his teacher would only pick up a knife to eat, but not to carry out dissections. **Andernach**'s other famous student was **Michael Servet** (1509 or 1511-1553), whom **Calvin** had caused to be burnt at the stake in Geneva in 1553 because of his antitrinitarian views. **Vesalius**' other teacher, **Jacques Dubois Sylvius** (1478-1555), was a fervent advocate of Galenism. Following the publication of Vesalius' *Fabrica*, their previous good relations and mutual esteem were transformed into a public conflict because of their diverging views on **Galen**. Thus, for example, **Sylvius** published his *"Widerlegung der gegen die Anatomie des Hippokrates und des Galen gerichteten Verleumdungen eines gewissen wütenden Verrückten" [A Refutation of Calumnies by a Certain Madman Against Hippocratic and Galenic Anatomy]* in 1551[35,36].

In 1537, **Vesalius** graduated, at 31 years of age, in Leuven as a Baccalaureus with the thesis "*Paraphrasis in nonum libri Rhazae medici arabis …*" On 5 December, 1537 he became a Doctor of Medicine, and the next day was appointed a professor in Padua, which he remained until 1543. In 1538, his *"Tabulae anatomicae sex"*, printed in Venice, which was actually the transcript of a lecture, was published. What had led **Vesalius** to break away from Galen's anatomy? Initially, Galen had been his guideline while performing dissections, but during this time he increasingly began to wonder why it was that he frequently was unable to verify Galen's descriptions, until one day the scales fell from his eyes when he realised that Galen had made inferences from apes and other mammals regarding humans, but had never dissected a human being. After that, **Vesalius** distanced himself from **Galen** and compiled a new anatomy of the human body[37] and during 1539-40 and 1542 wrote "*De humani corporis fabrica"* and the companion "*Epitome"*, the abbreviated version of the *Fabrica* for laypersons and artists without the chapters on dissection technique. At this time, however, he also collaborated on the first Basle

[32] STEIFF Karl (1887) Recommended citation format: Article "Oporinus, Johannes" by Karl Steiff in: Allgemeine Deutsche Biographie, published by the Historical Commission at the Bavarian Academy of Sciences and Humanities, Vol. 24 (1886), pp. 381–387. Digital full-text edition in Wikisource, URL: https://de.wikisource.org/w/index.php?title=ADB:Oporinus,_Johannes&oldid=2503436 (Version dated 14 April, 2016, 09:47 UTC). (No English version available)

[33] STEINMANN (1967), p. 20-31

[34] WOLF-HEIDEGGER G,1967, p. 52

[35] Vesani cujusdam columniarum in Hippokratis Galenique rem anatomicam depulsio per Jacobum Sylvium, Paris 1551, quoted from HUARD P, IMBAULT-HUARD (1980), p. 12.

[36] Most of this stems from HUARD P, IMBAULT-HUARD M.-J , (1980)

[37] ROTH (1892), p.11 ff

edition of Galen's collected writings, which were published by **Hieronymus Froben** and **Nicolaus Episcopus**[38].

What could have induced **Vesalius**, who had just been appointed personal physician[39] to Emperor **Charles V**, to have his *Fabrica,* a work which was extremely precious to him, published in Basle by **Oporin**, and not in Venice? The illustrations had been drawn by Venetian artists from the **Titian** school, the majority of them probably being the work of **Jan Stephan van Calcar** (1500-1546), to whom they are generally attributed[40,41]. The portrait of **Vesalius** that was placed at the beginning of the *Fabrica* is also attributed to him, if this is not actually a self-portrait *(Fig. 6)*. The printing blocks on which the illustrations are carved into the wood, which form the basis for the reproducibility of the anatomical work, were also produced in Venice. Presumably Vesalius hoped to achieve the largest sales of his work north of the Alps when he presented it in Frankfurt at Europe's most important book fair. Thus it probably made sense to transport only the printing blocks over the Gotthard Pass instead of entire print runs of the 661-page book in folio format, albeit with the risk of losing the core of the work. The fact that major disputes continued among the successors of Aldus Manutius around 1540 likely also played a role in the decision[42] to look around for a good printer on the other side of the Alps.

Apparently **Vesalius** placed considerable trust in Oporin's printing house, but he had nonetheless contractually reserved the right to retain the printing blocks with the illustrations in his own possession, and later in the possession of his heirs, in order to remain independent with regard to reprints in the event of dissatisfaction with the printer[43]. When **Oporin**'s printing works was dissolved, they remained in his possession. After his death, they were passed on to (**"Jerome"** – **Hieronymus**?) **Froben**, and then to **Hans König** [44].

Vesalius' first contacts with Basle originated through **Winter**, who had published the second edition of **Vesalius**' letter on bloodletting in 1539. We had already encountered Winter in the joint printing company with **Platter**, **Lasius** and **Oporin**. He had likely proposed his brother-in-law Oporin as a candidate for printer and publisher of the *Fabrica*. Although **Oporin** was already in high demand as a printer and publisher by that time, because he delivered outstanding quality, he had never published a book as large as the *Fabrica* was intended to be. The collaboration with **Vesalius** was initiated in summer 1542[45]. According to a letter dated 24 August, 1542, **Oporin** had already received the assignment at that time[46]. In the letter,

[38] Omnia Cl. Galeni Pergameni summi in arte medica viri opera: quotquot apud Graecos in hunc usque diem extiterunt tum olim, tum non ita pridem, hominum doctissimorum diligentia, in latinam linguam conversa, deinde recognita, & pristinae incolumitati restituta : quibus praemissa est praefatio dedicatoria Medicinae primam inventionem, eiusque incrementa, tum ipsam quoque Galeni vitam, ex eius operibus passim decerptam, prolixe depingens : duplex praeterea adiectus est index totius operis ... : Elenchum librorum totius operis ...Impressum LinkBasileae : [Hieronymus Froben and Nicolaus Episcopius], 1542

[39] The team of doctors at the court of Emperor Charles V comprised at least eight further personal physicians. He ranked third among these. The number one physician, Narcissus Parthenopeus Vertunus (1491-1551) resided in Naples, the number two, Cornelius van Baersdorp (1486-1565) in Belgium. Charles V suffered from insomnia, gout and an insatiable appetite which resisted all dietary restrictions. When conventional medicine failed, he then resorted to charlatans.

[40] ROTH (1892), p. 166,174, 301

[41] HUARD, IMBAULT-HUARD (1980) Biography pp.9-24

[42] http://www.onb.ac.at/ausb/projekte/001/paulus_manutius.html

[43] STEINMANN M., 1967 p. 36

[44] The printing blocks survived until they were destroyed in a fire in the cellar of the University of Munich Library during World War II, and were used for a final reprint by Munich-based publishing house Bremer Presse in 1932/35. They were used for earlier reprints by Augsburg bookseller Maschenbauer in 1706 and 1723. Further editions followed in Ingoldstadt in 1781 and 1783. Joffe Stephen N, Veronica Buchanan: The Andreas Vesalius woodblocks: a four hundred year journey from creation to destruction. Acta Med Hist Adriat. 2016 Dec;14(2):347-372. http://www.amha-journal.com/index.php/AMHA/article/view/112/65

[45] WOLF-HEIDEGGER (1967), p. 54.

[46] A letter dated 24 August 1542 which does not survive, but is

Vesalius had announced to **Oporin** that he would despatch the printing blocks with the illustrations over the Gotthard Pass to Basle with the Danoni trading firm in Milan. He had also given very precise instructions for printing the works in the letter[47]. Then, around the turn of the year 1542/43, he arrived in Basle himself to oversee the printing of the *Fabrica* and the *Epitome* – the abridged version of the *Fabrica*.

During his time in Basle, **Vesalius** made many friends. He had registered at the University of Basle between 1 and 16 January, 1543[48].

When **Jakob Karrer**, who was convicted of having murdered his wife, had been executed on 12 May, the opportunity arose for Vesalius "*to demonstrate to his friends the real way to perform a dissection*"[49].

This turned into a demonstration of anatomy which lasted several days. With this, he set a new direction in anatomy teaching at the Faculty of Medicine that moved away from scholastic medicine[50]. The dissection produced the oldest surviving, although rather damaged, anatomical skeleton, which has been preserved in the Anatomical Museum of the University of Basle. During this time, **Vesalius** also met with **Thomas** and his son **Felix**, the latter now six years old.

Vesalius made a lasting impression on **Felix**. Master butcher **Franz Jeckelmann**, whose daughter **Thomas Platter** had selected as the wife for his son **Felix** shortly thereafter, assisted **Vesal** at the autopsy[51].

In early August 1543, the printing of the *Fabrica* and *Epitome* was completed. Vesalius hardly had the work in his hands before he travelled with it to Speyer to present the two volumes dedicated to **Charles V** to the emperor in person there[52]. Two months after the original edition of the *Fabrica* was published in Latin, the rector at the time, **Albinus Torinus**[53], provided a German translation of the Epitome: *Von des menschlichen Cörpers Anatomey,* which was also published by **Oporin** in 1543[54].

"Barely two years after he started his own business, **Oporin** is now one of the foremost printers in Basle. If a scandal is the best publicity, he at least became famous across the entire empire because of the Koran, and in a laudable manner too." In the *Fabrica* and the *Epitome,* **Oporin** had not just printed and published one of the extremely important works that heralded a new era in medicine, but also, as **Steinmann**[55] wrote "*the volume was also on hand as a sample of his skills, which in its unobtrusive elegance is one of the most beautiful printed works of the sixteenth century.*" Thus **Vesalius**' *Fabrica* also "remained his printing houses' most magnificent book."

A proper friendship had developed between **Vesalius** and **Oporin**[56]. In 1547, Vesalius had again visited Oporin. In 1555, the second edition of the *Fabrica* was published, which had by this time increased to 824 pages. Possibly planned as early as around 1551, printing had already begun in 1552. The printing of this second edition was exceedingly arduous. Presentation copies were to be printed on parchment. However, procuring the "pelts" was difficult. Initial relief came from a parchmenter (parchment maker) who had just moved to Basle. Letters calling for help were sent out to Strasbourg and to Ulm. Then further problems arose with worn types, for whose recast **Oporin** had to request the loan or even purchase of

printed in the Foreword of the *Fabrica*

[47] WOLF-HEIDEGGER (1967), S.56

[48] WOLF-HEIDEGGER (1967), S 56

[49] ROTH (1892), S. 129 und Anhang X

[50] BURCKHARDT (1917), S. 321-2.

[51] ROTH (1892). S. 130

[52] WOLF-HEIDEGGER (1967), S 58

[53] Rektor according to ROTH (1892), S 128

[54] ROTH (1892), S 134

[55] STEINMANN (1967),S 36

[56] ROTH (1892), S.129

the moulds from the guardians of the still underage progeny of **Franciscus Dryander** (1518-1552), to whom the moulds had originally belonged but who had died in 1552 in Strasbourg of the plague, as did his wife shortly thereafter[57].

Finally, however, this second *Fabrica* became the *Fabrica* as we know it today, as one of the most beautiful books in the history of medicine. However, no edition on parchment is existant any more today, although three editions of the shorter *Epitome* on parchment, dating from 1543, were still recorded in 1962[58] .

Vesalius demonstrated his sense of connectedness to Basle in 1555 by interceding with **Charles V** on behalf of **Herwagen** for a printing privilege for **Herwagen** and the appointment of a nephew of Herwagen's as an imperial notary. He also interceded successfully for **Heinrich Petri**[59], "which was a cumbersome and costly proceeding"[60]. Despite the significant role played by the **Petri** printing and publishing house in promoting the Reformation, **Heinrich Petri** was awarded an aristocratic title by **Charles V** on 4 August, 1556. The title did not only apply to him, but also to his "*legitimate heirs and their heirs*". From that point onwards, he and his heirs styled themselves "**Henric-Petri**"[61]. One may well wonder why no aristocratic title was given to **Oporin** as well. Maybe he had no desire for it.

As regards **Vesalius**' subsequent career: When **Charles V** renounced the Spanish throne and abdicated as Holy Roman Emperor in 1556, **Vesalius** left the service of **Charles V**, subsequently practiced as a doctor in Brussels up to 1559 and became a personal physician to **Philipp II** from 1559 to 1564. He died wretchedly after a shipwreck on the island of Zakynthos on 2 October, 1564 while on his return voyage from a pilgrimage to Jerusalem, and numerous rumours and speculations abound pertaining to this trip and to his death.

[57] WOLF-HEIDEGGER (1967), pp. 69-71, STEINMANN (1967), p. 82 ff

[58] STEINMANN (1967), p. 41

[59] ROTH (1892), p. 240, p. 242

[60] LANFRANCHI (2013), p. 99

[61] LANFRANCHI (2013), p. 100 [and 60]

Oporin's subsequent life

But enough about Vesalius, with whose *Fabrica* and *Epitome* Oporin became established as one of the most important printers of his time. **Steinmann** describes his printing house as one of the largest. He kept six presses and one small press for corrections running and employed around 25 to 30 workers. **Oporin** printed just about everything that could [was permitted to] be published in Basle, even if the profit was doubtful. Authors knew that he used good paper and types that were appropriate to the format, and that the text would not be arbitrarily changed or distorted by the typesetters in his printing house. "*Absolute reliability in the printing of a manuscript was one of his principles, and he did not even remove pronounced errors in manuscripts, but only corrected them in marginal notes* [62]." In short, people knew that they could depend on him[63]. And just the pure fact of having something printed by Oporin could make one famous.

Oporin received an abundance of *manuscripts "Thus more printers than we can imagine drew on **Oporin**'s surplus, even in Strasbourg and Lyon. But he also printed for **Herwagen**, **Petri** and **Isengrim*** [64]." He was not very skilled in keeping his finances balanced, he took huge risks with numerous manuscripts, also spent too little time keeping his bookkeeping orderly. In addition, his second wife **Maria**, known as **Ficina**, was also said to have been a spendthrift. Furthermore, he had a lot of trouble with his stepsons. In 1557, he came very close to bankruptcy.

[62] STEINMANN (1967), p. 35

[63] STEINMANN (1967), p. 43

[64] STEINMANN (1967), p. 59

However, he also took risks printing religious manuscripts and was imprisoned for several days because of this at least three more times even after the Koran episode – wrongfully, as became subsequently manifest. One should not imagine that freedom of the press became accepted practice with the onset of the Reformation. While Greek and Roman authors could be printed with impunity – at some stage the market for these was saturated – religious manuscripts were subjected to capricious censorship. If something was not permitted to be printed in Zurich and Berne, which had become restrictive, for example even manuscripts by Bullinger, attempts were made to publish them in Basle, and vice versa. The most petty-minded disputes had broken out among the post-Reformation church doctrines. This is what happened in 1563 regarding Protestant vs. Lutheran manuscripts. It was strictly forbidden to print Catholic manuscripts. The languages in which manuscripts could be published were stipulated. The Basle printing houses were hard hit by the publication of the index in 1599, because not only individual books, but also printers were named as having been placed under suspicion.

In autumn 1564, his wife **Maria Ficina** had died after almost thirty years of marriage. After his friend **Johannes Herwagen** (1530-64) the younger had died of the plague, he married the latter's widow **Elisabeth Holzach**, known as "**Herwagiana**", in 1565, to whom he had offered assistance in a further censorship dispute of her deceased husband[65]. The two businesses were merged and **Oporin** had a short respite from his most pressing financial worries. However, only four months later, this woman, whom he had loved deeply, died on 17 July 1565. On 1 August,1566 the widow **Faustina Iselin** (1530-1602), daughter of **Bonifazius Amerbach** (1495-1562) and 36 years old, became his fourth wife. The portrait of **Oporin** by **Hans Bock the Elder** in Fig. 7 dates from this time. His new wife and her brother **Basilius** succeeded in persuading him to dissolve the heavily indebted printing house. Around New Year 1568, it was sold to brothers **Polycarp** and **Hieronymus**

Gemusaeus and **Balthasar Han**, who continued to run the business as "*Officina Oporiniana*" until around 1600. "*Because I have sold both businesses, the bookshop and the printing house. I can procure manuscripts for all other printers and pass them on to them and, as it were,* act as a whetstone[66]."

On 25 January, 1568 **Faustina** bore him a son, who brightened the very short remainder of his life considerably. In summer 1568 **Oporin** suddenly took ill and died on 6 July, 1568 in his 61st year[67].

Felix Platter: The retina is the light-sensitive tissue

In 1583, 40 years after **Vesalius**' *Fabrica*, 15 years after **Oporin**'s death and one year after the death of his father **Thomas**, in Book II[68] of his "*De corporis humani structura et usus libri III*" [The structure and function of the human body], **Felix Platter** almost incidentally published an illustration and description of the eye in Plate 4.9 which completely unhinged centuries of teaching that the lens was the light-sensitive organ in the eye and attributed this function to the retina *(Fig. 10)*. However, in Platter's plate, many of the individual illustrations have been taken from Vesalius' Plate 73 *(Fig. 8)*.

This enormous breakthrough for ophthalmology and understanding the sight process was on a par with the anatomy in Vesalius' *Fabrica*. With the three books in "*De corporis humani structura et usus libri III, Basel"*, **Felix Platter** aimed to make Vesalius' anatomy more accessible to students. Vesalius' plates were usually scaled down and adopted with a few amendments.

[65] STEINMANN (1967), pp.109,110

[66] STEINMANN (1967), p. 114, and Basel University Library "Officina Oporiniana"

[67] STEINMANN (1967), pp. 114,115

[68] PLATTER F.(1603). p 187, tab. p. 49

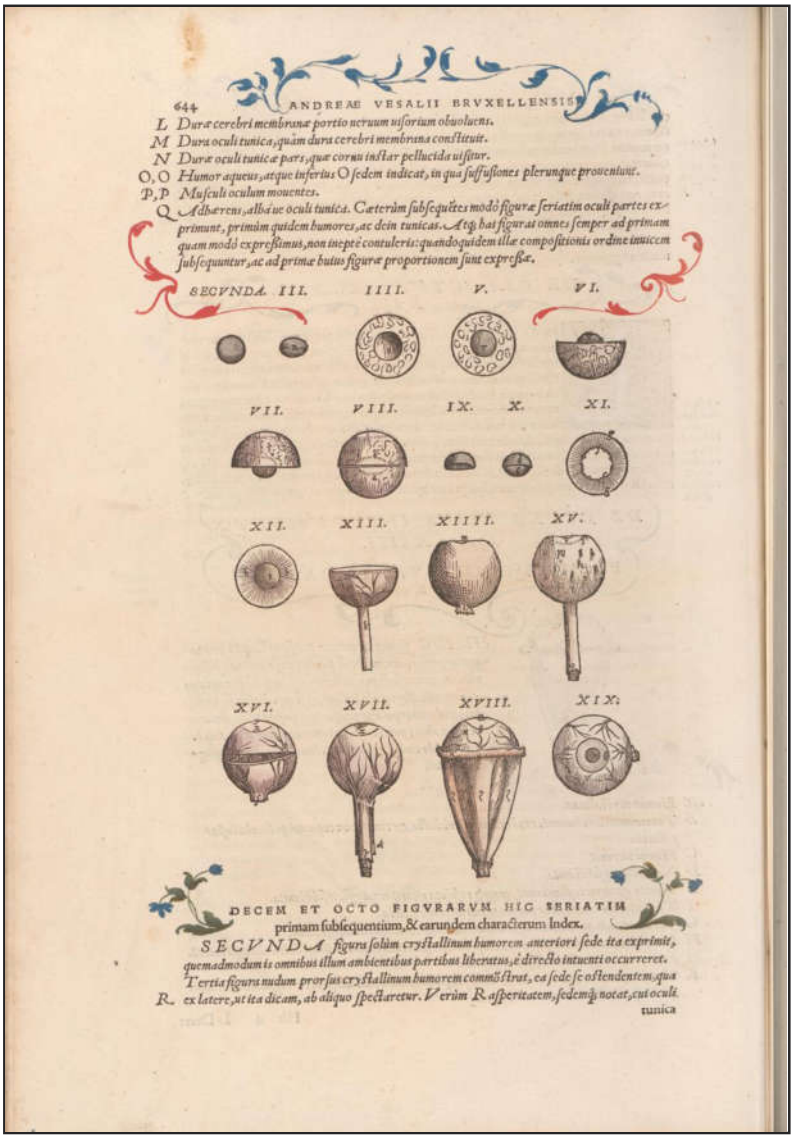


Fig. 8: *Depictions of the parts of the eye on p. 670 in the 1543 edition of Vesalius' "Fabrica" (colored copy, Universitätsbibliothek Basel, AN I 15). All these figures were incorporated in plate 4.9 in Book II of Platers "De Corporis Humani structura"* (see legend to fig. 10).

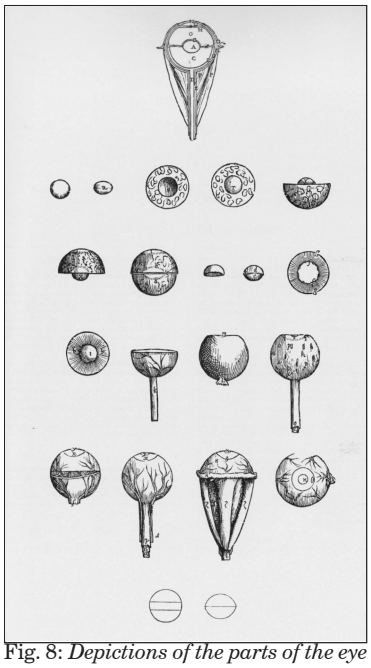


Fig. 8: *Depictions of the parts of the eye in the 1543 and 1555 edition of Vesalius' "Fabrica". The above illustration shows isolated in the first row the sectional view of the eye with the lens at the centre of the eye (see also Fig. 1)*

Fig. 9: *Title page of Platter's "De corporis humani structura…", 1st edition, 1563. The publisher information is at the bottom: "EX OFFICINA FROBENIANA Per Ambrosium Frob."*

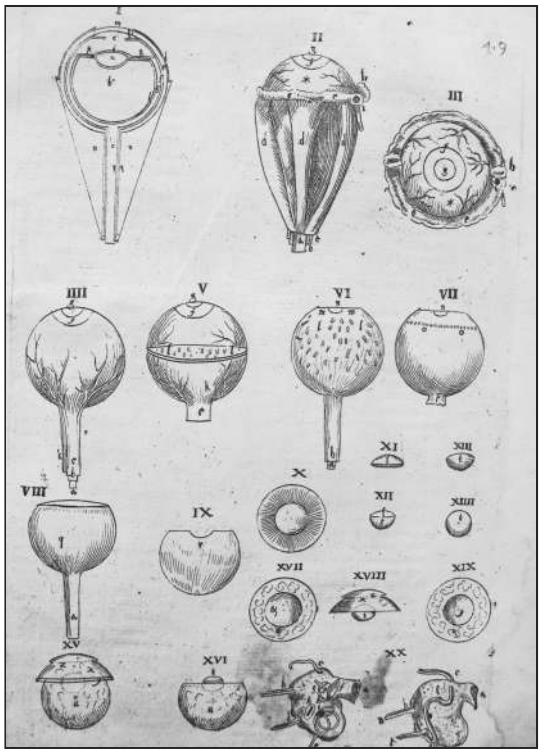
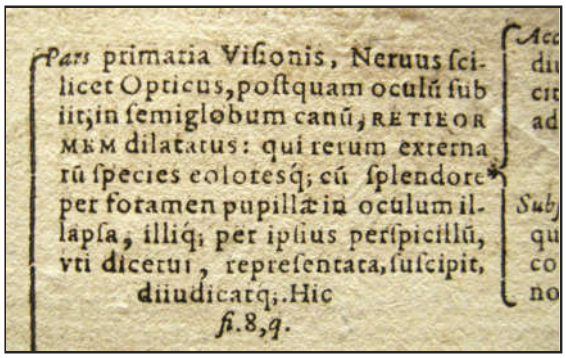


Fig. 10: *Fig. 10 In Fig. I (first figure in the first row) of plate 4.9 in Book II of F. Platter's "De Corporis Humani structura". The lens is positioned in the posterior chamber of the eye. This is the essential difference between the drawings regarding the eye presented in the 1543 edition of Vesals Fabrica 1543 p. 699 and 670, and in the 1555 Edition p. 798 and 799. All the other figures concerning the eye were taken from Vesals figures on p. 670 of the 1543 edition of the Fabrica, resp. p. 799 of the 1554 edition (Fig. 8) (s. also Fig. 1 and Fig. 2)*



Pars primatia Visionis, Neruus scilicet Opticus, postquam oculũ subiit, in semiglobum canũ, RETIFORMEM dilatatus: qui rerum externarũ species coloresq; cũ splendore per foramen pupillæ in oculum illapsa, illiq; per ipsius perspicillũ, vti dicerũt, representata, suscipit, diiudicatq;. Hic
fi. 8, q.

Fig. 11:*German Translation oft he Latin text (Koelbing, 1967, S. 72): „Das Hauptorgan des Gesichtssinnes, nämlich der Sehnerv, der sich zur hohlen Halbkugel des netzförmigen Nervus ausbreitet, sobald er in das Auge eingetreten ist. Dieser empfängt und unterscheidet die Formen und Farben der äusseren Dinge, die zusammen mit dem Licht durch die Öffnung der Pupille ihm durch seine Linse dargeboten werden." ["The main organ of the sense of sight, namely the optic nerve, which stretches out into a hollow hemisphere of the net-shaped nerve as soon as it enters the eye. This receives and distinguishes the shapes and colours of external things, which are presented to it through its lens together with the light through the opening in the pupil."]*

Fig. 12: *Felix Platter, 48 years old, in a portrait by Hans Bock the Elder, 1584, currently hanging in the meeting room of the Senate of the University of Basle (Kunstmuseum Basel, Inv. No. 84, photo credit: Martin P. Bühler. Sincere thanks goes to the Kunstmuseum for permitting the reproduction of the painting in this work).*

A decisive one is Fig. I in Plate 4.9 *(Fig. 2 and Fig. 10)*, in which the lens is no longer portrayed at the centre of the eye, but rather further to the front, though not yet adjacent to the posterior face of the iris, and with oversized posterior chamber and small anterior chamber. The decisive text is on p. 187, in which the retina is portrayed as the image-receiving part of the eye, and portraying it for the first time in this clear manner *(Fig. 11)*, but actually "incidentally", as Koelbing assessed [69].

Fig. 12, p.293, shows **Felix Platter** in 1584, 48 years old, at the height of his career, after having only initially become rector of the university in 1570, back then without an official position, and subsequently in 1571 professor of practical medicine and city physician (archiatros)[70].

However, one might wonder whether **Felix Platter** really was fully aware of the significance of his findings. He derived no principles from them to understand the projection of the outside world on the retina. This was first carried out by the great **Johannes Kepler** (1571-1630) in his Chapter V "*Über den Vorgang des Sehens*" [On the process of vision] in his "*Ad Vitellionem Paralipomena*" [The Optical Part of Astronomy], the 1604 supplement to **Vitello**'s treatise on optics, with the core sentence: "*Vision, as I explain it, arises from the circumstance that the entire hemisphere's image of the world, which is before the eye, and a little more above and beyond that, is put onto the white-red wall of the retina.*[71] *(p. 233).*" In doing so, he referred to **Felix Platter** (p. 222) and Fig. I in **Platter**'s Plate 4.1[72](p. 244). From Platter's illustration and description, he developed the dioptrics of the eye, which are essentially still valid today.

At the same time, he also explained the inversion of the image of the outside world on the retina.
On the title page (Fig. 13a) please note the information on the content placed directly above the author's name "Habes hoc


AD VITELLIONEM
PARALIPOMENA,
Quibus
ASTRONOMIÆ
PARS OPTICA
TRADITVR
Potissimùm
DE ARTIFICIOSA OBSERVATIO-
NE ET ÆSTIMATIONE DIAMETRORVM
deliquiorumq; Solis & Lunæ.
CVM EXEMPLIS INSIGNIVM ECLIPSIVM.
Habes hoc libro, Lector, inter alia multa noua,
Tractatum luculentum de modo visionis, & humorum oculi
vsu, contra Opticos & Anatomicos,
AVTHORE
IOANNE KEPLERO, S. C. Mto
Mathematico.
FRANCOFVRTI,
Apud Claudium Marnium & Hæredes Ioannis Aubrii
Anno M. DCIV.
Cum Priuilegio S. C. Maiestatis.

Fig. 13a: *Title page of Johannes Keppler's "Ad Vitellionem Paralipomena", in which, based on Platter's anatomy book, the dioptrics of the eye were portrayed correctly for the first time.*

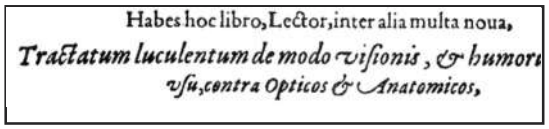

Habes hoc libro, Lector, inter alia multa noua,
Tractatum luculentum de modo visionis, & humorum
vsu, contra Opticos & Anatomicos,

Fig. 13b: *See text*

libro....". Translated, this means "Reader, receive in this book, alongside many other new things, a clear treatise on the visual process and the use of optic fluids in contrast to opticians and anatomists"[1] (Fig. 13b).

With Platter's anatomy book, we are still moving in the circles of one of Basle's major printing families. Ambrosius Froben (1537-1602) was a grandson of the founding father of these printing dynasties, Johannes Froben (1460-1527), son of Hieronymus Froben (1501-1563) and Anna Lachner. Ambrosius ran his father's business ("Officina Frobeniana") together with his brother Aurelius from 1563.

The interconnection of the Basle book printers in the 16th century

When Basle's book printing industry began to flourish around 1500, Johannes Froben,

[69] KOELBING (1967), p. 71

[70] BURCKHARDT (1917), p. 67

[71] KEPLER (2008 German Edition), p. 233

[72] KEPLER (2008 German Edition), p. 244

Johannes Amerbach and Johannes Petri were the key players, and around the end of the century, descendants of these families were still involved in the printing business. There was no printers' guild, meaning that the printers were bound neither to guild laws nor to membership of a guild. Analogous to the paper industry, book printing was outside the conventional guild-based economic order and therefore remained a free art, in the style of the liberal arts (*artes liberales*) at university, as confirmed by a court ruling of 1491. This offered substantial economic and social benefits[73]. However, the master craftsmen were free to join individual guilds without these guilds being able to exert any influence on his their printing and publishing business. Many of these printers remained guildless, but many also joined guilds. This gave them connections and influence in social circles. Up to August 1500, when the Basle Council prohibited book printers from "printing (anything) that would cause opprobrium and derision between Switzerland and Austria"[74], they were not subject to any censorship either. With the onset of the Reformation era, that changed, as Oporin, for example, experienced many times with his authors[75].

The printers may not have been subject to any guild laws, but there were nonetheless rules to which one adhered. Thus it was stipulated in 1531 that no reprints could be produced of books published by other Basle printers until at least three years after publication of the originals. If the authors themselves, for whatever reason, sought a different publisher and printer after the time limit had elapsed, those approached would refuse the job if the works concerned had been published several times by the same printer. Printers had to have consideration for each other, no one could afford to be ostracised[76].

Furthermore, the numerous and alternating interconnections between the printers and publishing houses also indicate that the printing families were in some cases very closely connected, married, related by marriage, and much more besides.

How this was able to come about can be seen in the following incidents relating to and involving Johannes Herwagen the Elder. It was the proofreading work at Herwagen which had whet Platter's appetite for the printer's craft during his first years in Basle. Afterwards, Herwagen remained a recurring presence in Platter's life. This is demonstrated by the following story, which provides an insight not only into Basle's marriage laws at that time, but also into how closely interrelated Basle's printing families had been.

Herwagen the Elder (1497-1557 or 1558) was one of the most important printers and publishers in Basle. He had printed a great number of Reformation manuscripts and had formed a printing alliance with Hieronymus Froben (1501-1563), the elder son of the founding father of the Froben printing family, Johannes (1460-1527), and the latter's brother-in-law Nicolaus Episkopus (1501-1563), who had been married to Johannes Froben's daughter Justine since 1529[77]. The alliance dissolved after Herwagen had taken the young widow of Johannes Froben, Gertrud Lachner, as his wife. This made Johannes Herwagen the stepfather of Gertrud Lachner's son Ambrosius Froben from her marriage to Johannes Froben, but also the brother-in-law of Anna Lachner, Gertrud's sister, who in turn was married to Hieronymus Froben (the Elder)(1501-1563), the eldest son of Johannes Froben. The marriage between Johannes Herwagen the Elder and Gertrud Lachner produced Johannes Herwagen the Younger in 1530. However, Herwagen the Elder subsequently committed adultery with Katharina Weckhardt, the wife of his stepson Ambrosius. He was banished from the city on 9 January, 1542, but permitted to re-enter the city on 4 February, 1545. The curfew imposed on him was only lifted – it was in force for five years! – on 27 April, 1547, apparently because his wife, Gertrud Lachner had forgiven him. Both marriages were dissolved, that of Gertrud to Herwagen and that of the young Ambrosius Froben to Katharina Weckhardt. Platter had attempted to mediate in this marital turbulence. However, all he earned was displeasure: «ich han vill umd in verdient, do ich ihm wider zu siner frowen geholfen han, dorumb ich dan D.Frobenii und Nicolai Episcopii ungunst überkam»[78] ["I did a lot for him, as I helped

[73] VAN DER HAEGEN (2001), p. 101 ff

[74] VAN DER HAEGEN (2001), p. 106

[75] See STEINMANN (1967), p. 84 ff, censorship decrees from 1524 and 1531, in this regard.

[76] STEINMANN (1967), pp. 56, 57

[77] PLATTER TH (1999), p. 174

[78] PLATTER TH.1999… p. 138

him get back to his wives, for which I then earned the disfavour of Froben and Episcopus."]

Following the both professional and marital connections of Johannes Herwagen the Elder to the families of Froben and Episcopus and that of Gertrud Lachner, who was both the mother of Erasmius Froben and Johannes Herwagen the Younger[79], Oporin also entered into this family circle in the course of his collaboration with both Herwagen the Elder and with Herwagen the Younger, Johannes, when he, as mentioned above, himself just widowed for the second time, had married Elisabeth Holzach, known as "Herwagiana", the widow of Herwagen the Younger, Johannes, who had died of the plague in 1564.

The extent to which business relations developed into close familial ties is demonstrated also in the two sisters, Gertrud and Anna Lachner. Their father, Wolfgang Lachner (1465-1518), a bookseller, was a close collaborator of Johannes Froben (1450-1527). Gertrud Lachner became Froben's second wife around 1510. The name and age of his first wife are unknown. Then to further deepen this already confusing story, Gertrud, after Froben had died, became the wife of Johannes the Elder. However, Lachner's other daughter, Anna, married the eldest son of Johannes Froben in 1524. He was Hieronymus (1501-1563), the son of Johannes from his first marriage. Thereby Anna became Johannes Froben's daughter-in-law and simultaneously sister-in-law (as Gertrud's sister) and in 1537 became the biological mother of Ambrosius Froben (1537-1602), who had printed Platter's anatomy book. But, as depicted above, because of the almost impossible tangle of interrelationships, she was also the sister-in-law of Herwagen the Elder.

However, what is also evident in these stories: Widows and widowers did not remain single for long. Evidently, during those times, both men and women were barely able to exist alone, without spouses. Many people were widowed at a young age, and thus widowed people frequently got together. Furthermore, if one attempts to untangle these family histories, it quickly becomes evident that one can discover a great deal about the men's biographical records – birth and death and their achievements – from reliable sources on the internet, but for the women one can usually only discover what their fathers did, dates of birth rarely, dates of death much more frequently, because this turned the husband into a widow and he found, or indeed, had to find himself a new wife.

[79] and grandmother and aunt of Ambrosius Froben, as he was the son of Hieronymus Froben and Anna Lachner, her sister

Summary

With the publication of his work, "*De humani corporis fabrica*", in 1543 with Oporin publishers in Basle, Andreas Vesalius (1514-1564) laid the foundation for modern medicine. Forty years later, in 1584, Felix Platter made a decisive contribution to understanding the visual process with Plate 4.9 in Vol. 2 of his work "De corporis humani structura" with his recognition of the retina as the light-sensitive tissue. A further 20 years later, in 1604, Johannes Kepler published his geometrical optics of the eye, which were based on Platter's anatomy book and which are still valid today, in "*Ad Vitellionem Paralipomena*". This work does not focus so much on these seminal events in the history of medicine and in understanding the process of vision, but rather on what took place around these publications in printing and publishing, at the University of Basle, in the medical faculty, and in civil society in Basle from the time of the dawn of the Reformation around 1500 up to the turn of the century around 1600, and focuses particularly on the two characters who were very close to the events in medical history. These are Thomas Platter, father of Felix Platter, and Oporin, the printer and publisher of Vesalius' "Fabrica". Vesalius' relationship with Basle is also dealt with in this work.

After Paris and Venice, Basle became a prominent city for publishing around 1500. The biggest names were Amerbach, Froben and Petri, some of whose publishing houses still exist today. Initially, the Church Fathers and the Greek and Roman writers were printed. When Froben published the writings of Erasmus, he paved the way for the Reformation. The publication of Luther's pamphlets with Johann Petri and of numerous Reformation tracts with Herwagen followed. In 1536, Thomas Platter, Johannes Oporin, Winter and Ruch issued the first edition of

Calvin's "Christianae religionis institutio", which was to change the world.

Thomas Platter was anything but a merely marginal figure in the history of the Reformation and in cultural life in Basle. His event-filled life, from poor goatherd boy in Grächen in the canton of Valais to teacher of Latin, Greek and Hebrew and to rector of the secondary school "auf Burg "in Basle, as well as to owner of three houses and a large estate, is just as worthy of recognition as the life of his son Felix, whose life is significant for medicine and ophthalmology. His remarkable autobiography is one of the first sources of information on cultural life in Basle at the time of the Reformation.

Another character who was anything but a marginal figure was Thomas Platter's early mentor, the highly erudite Johannes Oporin, who was a Greek and Latin lecturer at the University of Basle before dedicating himself solely to printing books. When he published Vesalius' "*De humani corporis fabrica*" he became one of the leading and most highly sought-after printers and publishers of his time. Nevertheless, his life was anything but easy. Because of censorship violations, he spent several days behind bars on numerous occasions, and he was often at the edge of bankruptcy because of missing payments. His professional connections and family circumstances provide deep insights into the close interconnections between Basle's printing families, despite the fact that there was no printers' guild.

While Vesalius stayed in Basle for several months to oversee the printing of his "*De humani corporis fabrica*", he exerted considerable influence on the development of the medical faculty through anatomy lectures and a public necropsy. As personal physician to Emperor Charles V, he championed privileges for several of Basle's printing magnates, and particularly for Heinrich Petri to receive a title. Thus the publication of Felix Platter's "*De corporis humani structura*" with Ambrosius Froben in 1563 also remained within these printing families.

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